

App. No. 10/750,455
Response of December 27, 2006
Reply to Office Action of June 27, 2006

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Listing of claims:

1. (Currently Amended) A method for providing overwrite detection for an allocable memory block, comprising:

receiving a request for performing one of requesting the allocable memory block, requesting the size of the allocable memory block, and freeing the allocable memory block;

generating an overwrite detection pattern for the allocable memory block; and

storing the overwrite detection pattern in the allocable memory block;

checking the overwrite detection pattern; and

forcing an access violation if the overwrite detection pattern has been modified.

2. (Currently Amended) The method of Claim 1, further comprising examining a the heap to determine whether the overwrite detection pattern has been overwritten.

3. (Original) The method of Claim 1, further comprising performing a checksum on the allocable memory block and storing the results of the checksum within the allocable memory block.

4. (Original) The method of Claim 3, further comprising examining the results of the checksum to determine the presence of memory errors.

5. (Original) The method of Claim 1, wherein the overwrite detection pattern is written at the end of the allocable memory block.

6. (Original) The method of Claim 1, wherein a logical function of the elements within the overwrite detection pattern provides a predetermined result.

7. (Original) The method of Claim 1, wherein the overwrite detection pattern is written within an area of the allocable memory block that is used for alignment purposes.

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8. (Canceled).

9. (Original) The method of Claim 1, further comprising storing a heap index for the allocable memory block within the allocable memory block, wherein the heap index points to one of a plurality of heaps.

10. (Original) The method of Claim 1, further comprising storing a timestamp within the allocable memory block, wherein the timestamp indicates the time when one of requesting and freeing the allocable memory block is performed.

11. (Currently Amended) A computer-readable medium arranged for storing having computer-executable components for overwrite detection within an allocable memory block, comprising:

a first component that is arranged to receive a request for performing one of requesting the allocable memory block, requesting the size of the allocable memory block, and freeing the allocable memory block;

a second component that is arranged to generate an overwrite detection pattern for the allocable memory block; ~~and~~

a third component that is arranged to store the overwrite detection pattern in the allocable memory block; and

a fourth component that is arranged to store a heap index for the allocable memory block within the allocable memory block, wherein the heap index points to one of a plurality of heaps.

12. (Currently Amended) The computer-readable medium of Claim 11, further comprising an examination component that is arranged to examine one of the plurality of heaps ~~the heap~~ to determine whether the overwrite detection pattern has been overwritten.

13. (Original) The computer-readable medium of Claim 11, further comprising a checksum component that is arranged to perform a checksum on the allocable memory block and storing the results of the checksum within the allocable memory block.

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14. (Original) The computer-readable medium of Claim 13, further comprising a checksum examination component that is arranged to examine the results of the checksum to determine the presence of memory errors.

15. (Original) The computer-readable medium of Claim 11, wherein the overwrite detection pattern is written at the end of the allocable memory block.

16. (Original) The computer-readable medium of Claim 11, wherein a logical function of the elements within the overwrite detection pattern provides a predetermined result.

17. (Original) The computer-readable medium of Claim 11, wherein the overwrite detection pattern is written within an area of the allocable memory block that is used for alignment purposes.

18. (Original) The computer-readable medium of Claim 11, wherein the overwrite detection pattern is checked and an access violation is forced if the overwrite detection pattern has been modified.

19. (Canceled).

20. (Original) The computer-readable medium of Claim 11, further comprising a timestamp component that is arranged to store a timestamp within the allocable memory block, wherein the timestamp indicates the time when one of requesting and freeing the allocable memory block is performed.

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21. (Currently Amended) A system for overwrite detection in an allocable memory block, comprising:

a computer memory that comprises a heap in which an allocable memory block ~~blocks~~ can be allocated and freed;

a memory allocator that is arranged to receive a request for performing one of requesting the allocable memory block, requesting the size of the allocable memory block, and freeing the allocable memory block;

a pattern generator that is arranged to generate an overwrite detection pattern for the allocable memory block; ~~and~~

an allocable memory block formatter that is arranged to store the overwrite detection pattern in the allocable memory block; and

a memory timestamp system that is arranged to store a timestamp within the allocable memory block, wherein the timestamp indicates the time when one of requesting and freeing the allocable memory block is performed.

22. (Currently Amended) The system of Claim 21, further comprising a memory verification system that is arranged to examine a the-heap to determine whether the overwrite detection pattern has been overwritten.

23. (Original) The system of Claim 21, further comprising a memory verification system that is arranged to perform a checksum on the allocable memory block and storing the results of the checksum within the allocable memory block.

24. (Original) The system of Claim 23, further comprising a memory verification system that is arranged to examine the results of the checksum to determine the presence of memory errors.

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25. (Original) The system of Claim 21, wherein the overwrite detection pattern is written at the end of the allocable memory block.

26. (Original) The system of Claim 21, wherein a logical function of the elements within the overwrite detection pattern provides a predetermined result.

27. (Original) The system of Claim 21, wherein the memory overwrite detection pattern is written within an area of the allocable memory block that is used for alignment purposes.

28. (Original) The system of Claim 21, wherein the overwrite detection pattern is checked and an access violation is forced if the overwrite detection pattern has been modified.

29. (Original) The system of Claim 21, further comprising a memory indexing system that is arranged to store a heap index for the allocable memory block within the allocable memory block, wherein the heap index points to one of a plurality of heaps.

30. (Canceled).

31. (New) The method of Claim 1, wherein the overwrite detection pattern is checked when the allocable memory block is passed back to the operating system.

32. (New) The computer-readable medium of Claim 18, wherein the overwrite detection pattern is checked when the allocable memory block is passed back to the operating system.

33. (New) The system of Claim 28, wherein the overwrite detection pattern is checked when the allocable memory block is passed back to the operating system.